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EXAMINER	
LAMARRE, GUY J	
ART UNIT	**PAPER NUMBER**
2133	5

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/930,004	TERNULLO ET AL.
	Examiner	**Art Unit**
	Guy J. Lamarre, P.E.	2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. This office action is in response to Applicants' **Amendment** of *19 March 2004*.

1.1 **Claims 1-13, 17, 22, 29** and **31** are amended; **Claims 32-33** are added. Claims 1-33 remain pending.

1.2 The prior art rejections and objections of record are withdrawn in response to Applicants' amendment

1.3 The indicated allowability of Claim 29, as set forth in the office action of 12/19/2003, is maintained.

Response to Arguments

1.4 Applicants' arguments of *19 March 2004* have been fully considered: they are found persuasive only to the extent **that the approach,** whereby parsing as claimed, is not specifically described by the prior art references of record. However, it is general knowledge that 'An XML parser is an information conversion tool, which converts DTMF code flow to XML data file and interfaces with D-Bus. Different services need different IVRs and different service procedure controls." **Grooters** (US Patent No. 6,684,399) discloses such marked-up language parsing feature for broadcasting on a network in Fig. 3.

REMARKS

1.4.0 In response to **Claims 1-33,** Applicants allege, on page 21 last para., that the "Applicants' message is broadcast, and any receiver can choose to accept or disregard the message depending on contents, not on TCP-type routing information…" Examiner notes that this language is not incorporated, as limitations, into all the independent claims.

1.4.1 In response to **Claims 1-33**, Applicants also allege, on page 22 1st para., that the "Applicants' message to transmitted requires data special formatting…" Examiner notes that this

language is not incorporated, as limitations, into all the independent claims, e.g., claims 5, 16, and 25.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2.1 Claims 28-33 are rejected under 35 U.S.C. 101 as claiming 'data signal' which is non-statutory subject matter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first and **second** paragraphs of 35 U.S.C. 112:

> 1. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> 2. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.1 **Claims 1-4 are** rejected under the **first paragraph of 35 U.S.C. 112** for failing to describe the manner in which the two instances of a broadcast signal are created and how the selection of the broadcast signal to be transmitted is performed. Specifically, claim 1 refers to two instances of generating a broadcast signal, one in the preamble 'containing' plural 'bytes' and one in the fifth limitation 'formed' out of a 'frame' and 'integrity element.'

3.2 **Claims 1-4 are** rejected under the **second paragraph of 35 U.S.C. 112.** It is unclear **to the Examiner** how the two instances of a broadcast signal are created and how the selection of the broadcast signal to be transmitted is performed. Specifically, claim 1 refers to two instances of generating a broadcast signal, one in the preamble 'containing' plural 'bytes' and one in the fifth limitation 'formed' out of a 'frame' and 'integrity element.'

Claim Objections

3.3 The listed claims are objected to because of the following informalities: claim 12 refers to the terms "parsing said plurality...," claim 16 to "therewith, therebetween," which had not been previously defined. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

4. Claim(s) 1-3 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of **Grooters** (US Patent No. 6,684,399).

As per claim 1,

TCP substantially teaches of creating and transmitting data signals (i.e. segments/packets/frames) through a communication medium to receivers, see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc...) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4, TCP fails to particularly mention the term: "parsing."

However Grooters, in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **TCP** by including therein a parsing technique as taught by **Grooters,** because such modification would provide the procedure disclosed in **TCP** with a technique whereby "*content information is broken down and analyzed*." {See **Grooters,** Fig. 3 at step 326.}

<u>As per claim 2,</u>

TCP/**Grooters** further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when disclosing known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is

XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

As per claim 3,

Grooters does disclose marked-up-language/XML documents in Fig. 3 *server 212 or network 222*. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the Internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc). Also see **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.

4.1 Claim(s) 4 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 4,

TCP/**Grooters** as noted above in claim 1 and later in claim 3 substantially teaches of the limitations of claim 4. TCP/**Grooters** does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP/**Grooters** does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP/**Grooters** using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

4.2 Claim(s) 5-9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of **Grooters** (US Patent No. 6,684,399).

As per claim 5,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17, and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets/frames as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum (which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4 and means to reverse such frame packeting or packaging, TCP fails to particularly mention that such frame reversal is for reverting a "parsing" routine.

However **Grooters,** in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine/reversal-thereof is executed for broadcasting data/HTML/markup-language/XML documents.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **TCP** by including therein a parsing technique as taught by **Grooters,** because such modification would provide the procedure disclosed in **TCP** with a technique whereby "*content information is broken down and analyzed.*" {See **Grooters,** Fig. 3 at step 326.}

<u>As per claim 6,</u>

TCP/**Grooters** substantially teaches, as noted above in claim 5, the limitations of claim 6.

With respect to the limitations of claim 6, TCP further teaches of a checksum that is calculated over its associated frame/packet, see pages 15-17 and specifically the Checksum paragraph of page 16.

<u>As per claims 7 and 8,</u>

TCP/**Grooters** substantially teaches, as noted above in claim 5, the limitations of claim 7.

With respect to the limitations of claim 7, TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

As per claim 9,

TCP/**Grooters** substantially teaches, as noted above in claim 5, the limitations of claim 9.

With respect to the limitations of claim 9, TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when disclosing known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

4.3 Claim(s) 10 and 11 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 10

TCP/**Grooters**, as noted above in claim 5, substantially teaches of the limitations of claim 10. TCP/**Grooters** does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP/**Grooters** does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see lines 3-6 of paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP/**Grooters** using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

As per claim 11,

TCP/**Grooters**, as noted above in claim 5 and later in claim 10, substantially teaches of the limitations of claim 11. TCP/**Grooters** does not teach of data signal being created by modulating an electric light.

Specs, in an analogous art, teaches of modulating an electric light to generate optical signals as being known in the art, see lines 1-5 of paragraph 161 of page 55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create frames/packets/broadcast signal of TCP/**Grooters** by modulating an electric light. This modification would have been obvious to one of ordinary skill in the art would because one skilled in the art would have known of the techniques as mentioned by Specs. Further, since Specs discloses that the techniques are known in the art, one skilled in the art would readily be able to modulate light so as to generate the optical signals with which the data signals are transferred over.

4.4 Claim(s) 12,13 and 15 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) in view of **Grooters** (US Patent No. 6,684,399).

As per claim 12,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc…) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4, TCP fails to particularly mention the term: "parsing."

However **Grooters,** in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.} **Therefore**, it would

have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **TCP** by including therein a parsing technique as taught by **Grooters,** because such modification would provide the procedure disclosed in **TCP** with a technique whereby "*content information is broken down and analyzed.*" {See **Grooters,** Fig. 3 at step 326.}

While TCP/**Grooters** does not explicitly teach of making the transmission available for handheld devices, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the broadcast signal available for a handheld device. Handheld devices (i.e. PDAs) are essentially handheld computers that can process information whether received via their infrared port or through their physical port. One skilled in the art would obviously want a handheld device to be able to receive information so as to be able to communicate with it.

Further, **while** TCP does not explicitly teach of apparatuses, devices, or computer readable executable code embedded to carry out the methods taught, **Grooters** does in Fig. 3 server 212. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type of hardware or computer executable code once the method is known/determined.

<u>As per claim 13,</u>

Grooters does disclose marked-up-language/XML documents in Fig. 3 *server 212 or network 222*. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the Internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be

comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

As per claim 15,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

4.5 Claim(s) 14 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 14,

TCP/**Grooters** as noted above in claim 12 substantially teaches of the limitations of claim 14. TCP/**Grooters** does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP/**Grooters** does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

4.6 Claim(s) 16-19 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399).

As per claim 16,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17 and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum (which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4. TCP further teaches of a checksum that is calculated over its associated frame/packet, see pages 15-17 and specifically the Checksum paragraph of page 16. TCP further teaches of checking a checksum at the receiver to ensure that

the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated. Further, TCP teaches of passing the frames/segments/packets on if the checksums match, see paragraph 3 of page 4, specifically where TCP mentions discarding damaged segments (i.e. segments in which the checksums do not match) and keeping/passing on those that do match.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4 and means to reverse such frame packeting or packaging, TCP fails to particularly mention that such frame reversal is for reverting a "parsing" routine.

However Grooters, in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine/reversal-thereof is executed for broadcasting data/HTML/markup-language/XML documents.}

While TCP does not explicitly teach of apparatuses, devices, or computer readable executable code embedded to carry out the methods taught, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings in some type of hardware or computer executable code once the method is known/determined.

<u>As per claim 17,</u>

Grooters does disclose marked-up-language/XML documents in Fig. 3 *server 212 or network 222*. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the Internet, requesting an XML document (which

obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc). Also see **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.

As per claim 18,

TCP further teaches of discarding the frames/segments/packets on if the checksums match, see paragraph 3 of page 4, specifically where TCP mentions discarding damaged segments (i.e. segments in which the checksums do not match).

As per claim 19,

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

4.7 Claim(s) 20-22 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399).

As per claim 20,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of parsing (or packeting or packaging) bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc…) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. In paragraph 6 of page 40, TCP further teaches of transmitting the signals over an established connection, hence TCP teaches the limitation of transmitting through communication medium to the device.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4, TCP fails to particularly mention the term: "parsing."

However **Grooters,** in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **TCP** by including therein a parsing technique as taught by **Grooters,** because such modification would provide the procedure disclosed in **TCP** with a technique whereby "*content information is broken down and analyzed.*" {See **Grooters,** Fig. 3 at step 326.}

While TCP does not explicitly teach of making the broadcast signal available for transmission to a receiving device, **Grooters** does disclose such data transfer in Fig. 3 *server 212 or network 222*. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the broadcast signal available for the transmission. TCP, in paragraph 6 of page 40, does teach of a connection that is established and data is communicated between senders and receivers. Therefore making the signal available for transmission to a receiving device must occur since TCP teaches that a connection is established and data/segments are communicated/exchanged.

<u>As per claim 21,</u>

TCP further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the

art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

As per claim 22,

Grooters does disclose marked-up-language/XML documents in Fig. 3 *server 212 or network 222.* Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is akin to a user on a network, possibly the Internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc).

4.8 Claim(s) 23 and 24 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399) in view of admitted prior art "Specifications" (hereinafter Specs).

As per claim 23

TCP/**Grooters**, as taught above in claim 20, substantially teaches of the limitations of claim 23. TCP, however, does not teach of transmitting the signal as a diffuse infrared signal. Nonetheless, TCP/**Grooters** does teach of establishing communication connections.

Specs, in an analogous art, teaches of diffuse optical communication as a common optical communication protocol, see line see lines 3-6 of paragraph 88 on page 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit the frames/packets/broadcast signal of TCP/**Grooters** using the optical communication protocol. This modification would have been obvious because one of ordinary skill in the art would have been motivated by the suggestion provided by Specs that diffuse optical communication protocol is a commonly used protocol and hence communication method.

As per claim 24,

TCP/**Grooters**, as taught above in claim 20, substantially teaches of the limitations of claim 24. TCP/**Grooters** does not teach of data signal being created by modulating an electric light.

Specs, in an analogous art, teaches of modulating an electric light to generate optical signals as being known in the art, see line see lines 1-5 of paragraph 161 of page 55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create frames/packets/broadcast signal of TCP/**Grooters** by modulating an electric light. This modification would have been obvious to one of ordinary skill in the art would because one skilled in the art would have known of the techniques as mentioned by Specs. Further, since Specs discloses that the techniques are known in the art, one skilled in the art

would readily be able to modulate light so as to generate the optical signals with which the data signals are transferred over.

4.9 Claim(s) 25-27 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399).

As per claim 25,

TCP substantially teaches of exchanging (and hence transmitting and receiving) segments/packets/data signals having a plurality of bytes in paragraph 1 of page 4 and paragraph 6 of page 40. TCP further teaches of creating frames/packets and headers (integrity elements) to transmit data, see paragraph 1 on page 4 and pages 15-17 and of using the checksum to ensure reliability, see paragraph 3, page 4. By teaching of creating the data and communicating/transferring it in a specific manner, the Examiner is interpreting that TCP is teaching of both how to send and receive the data. When read in this light, it is clear that if TCP teaches of how to create frames (packets) and associated integrity elements (headers) and how to combine the frames and integrity elements (i.e. append the header to the packet), then TCP teaches how to detect and separate packets as well. Further, with TCP teaching of headers and what they are comprised of on pages 15-17, it is clear that TCP teaches of determining the contents of the integrity element (header). Further, TCP explicitly teaches of using the checksum (which is one of the contents of the header/integrity element) to disregard damaged segments/packets, see paragraph 3 on page 4.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4 and means to reverse such frame packeting or packaging, TCP fails to particularly mention that such frame reversal is for reverting a "parsing" routine.

However **Grooters,** in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine/reversal-thereof is executed for broadcasting data/HTML/markup-language/XML documents.}

As per claims 26 and 27,

TCP substantially teaches, as noted above in claim 25, the limitations of claims 26 and 27. With respect to the limitations of claims 26 and 27, TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

4.10 Claim(s) 28 and 30-31 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC 793 – Transmission Control Protocol Specification (hereinafter TCP) and **Grooters** (US Patent No. 6,684,399).

As per claim 28,

TCP substantially teaches of creating and transmitting data signals (i.e. packets/frames) through a communication medium to receivers see paragraph 1 of page 4. TCP further teaches of computing a checksum over the data, see Checksum paragraph on page 16. TCP further teaches of providing an integrity element, see pages 15-17, which the Examiner is interpreting as a header since it is essentially made of data (i.e. checksum, size, etc…) that will help determine the validity of the data frame. On pages 15-17, TCP teaches of an integrity element (header) that contains the checksum and how the integrity element (header) encapsulates (or associated with) one frame (or packet). On page 4, paragraph 3 teaches how the integrity element (header), specifically the checksum, can be used to determine if the received frame/data subset (or packet) is intact/valid or damaged. Further, in paragraph 1 of page 15, TCP teaches how the header and

data are sent together as segments (i.e. broadcast signals). In paragraph 1 of page 4, TCP further teaches that the broadcast signals (i.e. segments) are transferred in both directions, hence TCP teaches the limitation of transmitting signals to receivers. TCP further teaches of checking a checksum at the receiver to ensure that the segment is not damaged, see paragraph 3 of page 4. Clearly, if the checksum is calculated upon receipt and matches the transmitted checksum, then the segment/frame/packet will be validated, otherwise, when the two checksums don't match, the "damaged" one will be discarded or invalidated.

While TCP does explicitly teach packeting or packaging bytes into frames (or packets) containing a subset of the bytes, see paragraph 1 of page 4 and means to reverse such frame packeting or packaging, TCP fails to particularly mention that such frame reversal is for reverting a "parsing" routine.

However **Grooters,** in an analogous art, discloses a network communications *wherein* such techniques are described. {See **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine/reversal-thereof is executed for broadcasting data/HTML/markup-language/XML documents.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in **TCP** by including therein a parsing technique as taught by **Grooters,** because such modification would provide the procedure disclosed in **TCP** with a technique whereby "*content information is broken down and analyzed.*" {See **Grooters,** Fig. 3 at step 326.}

While TCP/**Grooters** does not explicitly teach of the data signal being used to modify the operation of the receiving device, TCP does teach of the use of acknowledgements (ACKs) to inform the sender that a packet has been received, see paragraph 1 of page 10, and of the use of PUSH commands, see paragraphs 5-7 of page 12, to change (modify) the operation of the receiver to "push" the data immediately. Therefore, through the use of ACKs to inform the

receiver to send newer, or older segments, and the use of PUSH commands to pass the data on immediately, TCP teaches of modifying the operation of the receiver (and sender too).

As per claim 30,

TCP/**Grooters** further teaches of an integrity element (header) that comprises a size value, see page 17, paragraph 2 where the TCP length is described. Further, it would have been obvious to one of ordinary skill in the art to include both the checksum operation and seed value. If these values were not previously agreed upon by the communication devices, then one of ordinary skill in the art would obviously want to transmit these values so as to allow the receiving device to be able to calculate the checksum and validate/invalidate successfully.

Further, with respect to the operator to compute the checksum, as is common in the art, checksums are typically calculated with XORs or summing in mod 2 arithmetic. Further, the specifications do not teach of any checksum calculation techniques other than XOR when speaking known techniques to calculate the checksum. Therefore the need to transmit the operator along with the integrity element is not clear (especially if the only admitted operation is XOR). While it is understood that checksum can be calculated various specific ways (i.e. CRC), the operator used is typically the XOR.

It is further unclear why the checksum operation and seed values are not uniformly agreed upon beforehand so as to save bandwidth (i.e. have to transmit less bits) and save calculation time (i.e. immediately calculate checksum upon receiving as opposed to receiving the packet and read out the operation and then calculate the checksum).

As per claim 31,

Grooters does disclose marked-up-language/XML documents in Fig. 3 *server 212 or network 222*. Or equivalently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the data signal contain an XML element. Essentially, this is

akin to a user on a network, possibly the Internet, requesting an XML document (which obviously contains XML elements), having the document framed (or packeted up) and transmitted off to the receiver. Simply put, the data that the frame/packet contains can be comprised of almost any type of transferable data, (i.e. XML document with XML elements, HTML document etc). Also see **Grooters,** Id., Fig. 3 at step 326 wherein parsing routine is executed for broadcasting data/HTML/markup-language/XML documents.

Allowable Subject Matter

5. Claims 29 and 32-33 are allowable over the prior art and would be allowed if rewritten to overcome the previously stipulated rejections under 35 USC 101.

5.1 Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6.1 Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached on (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Guy J. Lamarre, P.E
Primary Examiner
6/12/04